Document Title:

(1) Draft Work Plan, Ordnance and Explosives Range Evaluation, IRP Site 1, Explosive Ordnance Disposal Range, Marine Corps Air Station, El Toro, California

Reviewer: Triss Chesney- Department of Toxic Substances Control, Remedial Project Manager, Southern California Branch, Office of Military Facilities, Letter Dated May 2, 2001

Comment No.	Section/ Page No.	Comment	Response
GENERAL COMMENTS			
1.		In the Work Plan, the Department of the Navy (DON) proposes that if an unexploded ordnance (UXO) item is determined to be unsafe to move, an emergency removal action is required. The proposed emergency removal action for UXO consists of Blow(ing) it in place (BIP). In determining that unstable UXO requires an emergency removal, the DON has not evaluated other alternatives to BIP. Additionally, the DON proposes to provide a public comment period after initiation of emergency removal actions. DTSC believes that other alternatives to BIP should be evaluated and selection of an alternative should be properly documented. Further, an opportunity for public participation, including a public comment period of at least 30 days and responses to comments, should be provided prior to initiation of OE clearance activities in which unstable UXO may be encountered at Site 1.	The document has been revised to classify all Ordnance and Explosives (OE) items into the following two types: (1) unsafe-to-move OE, and (2) safe-to-move OE. The work plan has been revised to propose that all OE items (including unsafe OE) will be handled as investigation-derived waste (IDW), and characterized in accordance with applicable federal, state, and local regulations. However, the consideration of encountered OE as IDW does not preempt or negate any applicable regulations pertaining to the handling/detonation of this OE. (The classification of the OE handling is addressed below in this response, in specific reference to DTSC's citation of California Health and Safety Code (HSC) Section 25123.5). The standard approach for handling OE that is unsafe to move is BIP, in accordance with procedures established by the U.S. Army Corps Engineering and Support Center, Huntsville (USACESCH). Safe to move OE will be inspected to segregate, certify, and dispose of any items that are OE scrap, in accordance with procedures already presented in the work plan. The work plan has been revised to evaluate alternatives to handle both safe and unsafe to move OE against the following nine criteria: long-term effectiveness and permanence; reduction of toxicity, mobility or volume; short-term effectiveness; implementability; cost; acceptance by regulatory agencies; and community acceptance. The work plan has been revised to clarify that a public comment period of at least 30 days will be made available prior to the implementation of field activities. The OE range evaluation fieldwork that will be conducted at Site 1 is strictly site characterization/range evaluation, and not clearance activities (which would be typical of a removal/remedial action that follows site characterization).

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1. (cont.)		The United States Environmental Protection Agency (U.S.EPA) categorizes removal actions in three ways, emergency, time-critical, and non-time-critical based on the type of situation, the urgency and threat of the release or potential release, and the subsequent time frame in which the action must be initiated. Emergency removals are appropriate when there is a release that requires a response within hours. DTSC understands that Site 1 is secure and potential emergency removal action has remained on site without incident at least since closure of the base on July 2, 1999. As a result, DTSC does not agree with the determination that an emergency removal action is required.	OE clearance activities that could be considered as emergency, time-critical, or non-time-critical removal actions will not be conducted as part of this investigation. OE items (including unsafe to move OE) encountered during site characterization will be handled as IDW. The premise of BIP is based on exposure to the unsafe-to-move OE and consequential need for immediate action to protect human health and safety. Accordingly, as pointed out in this comment, the release of the item has remained on site without incident, and does not warrant an emergency removal action. However, the exposure that occurs upon the uncovering of the unsafe-to-move OE during site characterization poses an unacceptable safety risk/hazard, in the context of an immediate danger to life and health. In conclusion, BIP is proposed not as a removal action for a release, but as an action to handle IDW, which poses an immediate threat. All references to emergency removal action have been deleted from the document.

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1. (cont.)		Additionally, DTSC classifies OE/UXO at closed, transferred or transferring ranges as a hazardous waste. Pursuant to California Health and Safety Code (HSC) Section 25123.5, the definition of treatment includes any method, technique, or process that removes or reduces the harmful properties or characteristics of a waste. As a result, detonation, which is the method used to remove the reactive characteristic of OE/UXO, is considered to be treatment. As such, treatment of a hazardous waste is an activity regulated by DTSC pursuant to HSC, Chapter 6.5, Section 25201. However, pursuant to HSC, Chapter 6.8, Section 25358.9(a), DTSC "may exclude any portion of a response action conducted entirely onsite from the hazardous waste facility permit requirements of Section 25201 if both of the following apply: (1) The removal or remedial action is carried out pursuant to a removal action work plan or a remedial action plan prepared pursuant to Section 25356.1. (2) The removal action work plan of the remedial action plan requires that the response action complies with all laws, rules, regulations, standards, and requirements, criteria, or limitations applicable to the construction, operation, and closure of the type of facility at the hazardous substance release site and with any other condition imposed by (DTSC) as necessary to protect public health and the environment." Since MCAS El Toro is included on the National Priorities List (NPL) and the United States Environmental Protection Agency (EPA) is identified as the lead regulatory agency, a Federal document that is substantively equivalent to a removal action work plan or remedial action plan will be acceptable.	The Navy understands that if DTSC classifies OE/UXO at closed, transferred or transferring ranges as hazardous waste, then handling the OE/UXO as IDW or otherwise, entails treatment pursuant to HSC. To meet the exclusion from HSC Section 25201 (requirements of the hazardous waste facility permit), the Navy proposes the following: 1. The OE handling procedures presented in this work plan will meet the substantive requirements of a removal action work plan prepared pursuant to Section 25356.1. 2. The OE handling procedures presented in this work plan will comply with the applicable substantive requirements of rules, regulations, standards, and requirements, criteria, or limitations applicable to OE detonation procedures along with any actions necessary to protect public health and the environment. This Ordnance and Explosives Range Evaluation Work Plan will serve as the document that is substantively equivalent to a removal action work plan/remedial action plan, with respect to procedures for handling OE encountered/generated during site investigation.

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Comment No.	Section/ Page No.	Comment	Response
1. (cont.)		The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 121(e) and HSC, Division 20, Chapter 6.8, Section 25358.9 provides for exemption from permits. However, substantive requirements applicable to treatment must be adequately addressed as applicable, or relevant and appropriate requirements (ARARs). As a result, in preparation of a remedial action plan, removal action work plan or equivalent document, Title 22, California Code of Regulations, Section 66264.600 et seq. under Article 16, Miscellaneous Units are ARARs for the treatment of OE/UXO. Further, OE cleanup at the former Fort Ord military reservation was characterized as a remedial action. See Monterey Bay Unified Air Pollution Control District versus the United States (US) Department of the Army and US Department of Defense, NO. C-99-20485-RMW (US District Court for the Northern District of California, March 13, 2001). Please explain why the OE cleanup at Site 1 should not be characterized as a remedial action. Additionally, please provide justification for selecting the type of response action (e.g. time-critical removal action, non-time-critical removal action or remedial action) that the DON would prefer to use to address potential unstable UXO items at Site 1.	The range evaluation at Site 1 is not a removal action; it is an investigation consistent with CERCLA, which will allow the Navy to gather the data necessary to make an assessment of future site conditions and required response actions. Handling of OE (including detonation) that is encountered during the investigative action will meet the substantive requirements applicable to treatment as stated in this comment, including those applicable to Miscellaneous Units. The evaluation phase at Fort Ord was completed in the mid-to-late 1990s. The data gathered during that evaluation was used to determine future required removal actions that were necessary to return the property to a safe condition for transfer. Fort Ord is now using the data gathered during the evaluation phase to conduct site remedial actions as required.

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Comment No.	Section/ Page No.	Comment	Response
SPECIFIC COMMENTS			
1.	Section 1	Introduction: The fifth paragraph states, "A range identification and a preliminary range assessment was conducted by the U.S. Army Corps of Engineers (USACOE) for MCAS El Toro, including Site 1 (USACOE 1998)." Please include a brief summary of the objectives and findings of the range identification and preliminary range assessment conducted by USACOE in Section 1.3, MCAS El Toro – Description and Background. Additionally, please provide a copy of this document to DTSC for reference.	A summary of the objectives and findings of the range identification and preliminary range assessment conducted by USACOE has been included as Section 2.3. The DoN will also provide a copy of the document to DTSC.
2.	Section 1.3	MCAS El Toro – Description and Background: On July 26, 2000, DTSC was provided with a copy of a letter regarding "Close-Out Inspection of MCAS El Toro, CA (Phase I)," dated May 3, 1999. The letter was sent by the Commander, Naval Ordnance Center to the Commander, Marine Corps Air Bases West. The letter stated that Phase I of close-out inspection was conducted to inspect potential explosion sites on February 24, 1999. Phase II was to be conducted after the squadron has permanently detached from the MCAS. Since MCAS El Toro was closed on July 2, 1999, please provide information regarding Phase II of the close-out inspection that was to be conducted. For clarification, please include the close-out inspection information in the context of the background for Site 1 and potential explosive sites. The background information for Site 1 should include a comprehensive summary of the history of Site 1 and particularly activities to ordnance and explosives.	Pertinent information from the Close-Out Inspection of MCAS El Toro has been added to Section 2.5. A Phase II inspection was recommended for sites not inspected during the Phase I inspection. Therefore, a Phase II inspection of Site 1 was not required. This information was taken from the Close-Out Inspection letter report dated 3 May 1999, Enclosure (3), List of Facilities Inspected, which shows the facilities inspected during Phase I and the facilities to be inspected during Phase II.

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Comment No.	Section/ Page No.	Comment	Response
3.	Section 2.1	Location: The second paragraph states, "A bermed retention pond is present in the northern portion of the site." Please show the location of the retention pond on Figures 2-1 and 3-1 for reference.	Figures 2-1 and 3-1 have been revised to illustrate the location of the retention pond.
4.	Section 2.2	EOD Activities: This section briefly describes both military and law enforcement activities conducted at the EOD Range. The description of the ordnance reportedly used at the range is not sufficient. Please provide a more specific list of the military ordnance with the smallest ordnance described. Additionally, please provide a more detailed description of EOD operations involving ordnance. Further, the description of the civilian and commercial explosives detonated by law enforcement agencies is not sufficient. Please provide a more specific list of the explosives and the associated operations. In response to a request for information from DTSC, the Federal Bureau of Investigation (FBI) forwarded information regarding historical law enforcement activities conducted at the EOD Range. DTSC can provide copies of this information to the DON upon request.	A description of the EOD operations, including a list of explosives that were used to destroy unserviceable items, has been included in Section 2.3, as part of the summary of the USACOE report. A more specific list of the military ordnance used at Site 1 (including the smallest that was used) was developed as part of this work plan preparation and has been included as Section 2.4. Additional description of civilian and commercial explosives detonated by law enforcement agencies has been included as section 2.2.
5.	Section 3	Work Plan Approach: Please include an estimated schedule of activities.	A schedule has been provided and is also attached here.

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Comment No.	Section/ Page No.	Comment	Response
6.	Section 3.2.2	Project Decisions: The principal study decision is identified as, "Deciding whether the 'explosives safety risk' due to the presence of OE requires response actions that would be consistent with anticipated reuse." Please provide information regarding the proposed future land use of Site 1. Additionally, please verify that the degree of OE cleanup consistent with the future land use and describe how will future access to the site be controlled.	The site is proposed to be transferred to the FBI for use similar in nature to past EOD training. A Site-Specific Environmental Baseline Survey (EBS) and an Environmental Summary Document (similar in content to a Finding of Suitability to Transfer) have been prepared and approved by the BCT. Pertinent information from these documents has been briefly summarized in this work plan. This information includes notifications and restrictions with regard to the transfer of Site 1 from DoN to the FBI, and addresses the issue of controlling future access to the site. Per DoN policy, response actions such as OE cleanup consistent with future land use will be evaluated based on the findings of this investigation.
7.	Section 3.2.5	Decision Rules: Decision Rule Number 1 describes that strategies for conducting surface and geophysical surveys relative to several boundaries such as inside perimeter, perimeter fence, brush line, metal fence and site boundary. It is difficult to determine which boundaries and associated areas are referenced. For clarification, please clearly identify all of the boundaries on Figure 3-1, Investigation Approach, so that the reader will understand which areas are referenced.	Figure 3-1 has been revised to clearly identify all of the boundaries and associated areas that are referenced in the decision rules.

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Comment No.	Section/ Page No.	Comment	Response
8.	Section 3.2.5	Decision Rules: Decision Rule Number 1.b. states, "If no OE or OE scrap are discovered during the initial survey, then a subsurface geophysical survey will be conducted along a 30-foot wide transect inside the perimeter fence, to verify that kick-out items do not lay buried at or near the surface." Please clarify if the initial survey refers to the surface survey of the inside perimeter of Site 1 described in Decision Rule Number 1. Additionally, please clarify that the criteria, "If No OE or OE scrap are discovered..." is correct. It appears that the criteria should state, "If OE or OE scrap are discovered..."	Yes, the initial survey in Decision Rule 1.b refers to the surface survey along the inside perimeter of Site 1. Yes, Decision Rule 1.b as stated "if no OE or OE scrap are discovered, then a subsurface geophysical survey will be conducted along a 30-foot-wide transect inside the perimeter fence, to verify that kick-out items do not lay buried at or near the surface" is correct. Irrespective of finding OE or OE scrap, a subsurface geophysical survey will be conducted for verification purposes. This was conveyed by Decision Rule 1.a.

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Comment No.	Section/ Page No.	Comment	Response
9.	Section 3.2.5	Decision Rules: Decision Rule Number 2 describes the steps to evaluate if an OE item is a UXO. Please provide detail regarding the steps to determine if an OE item is a UXO and if the UXO is unsafe to move.	The following steps for determining if an OE item is unsafe to move have been added to section 4.4.4. Each OE item will be inspected to determine if it is armed or unarmed, and if it is unsafe to move due to damage. The determination that it is armed or unarmed is in part based on the following criteria: a. Proper identification of ordnance item and fuzing. Utilizing the applicable technical manuals, the item will be identified based on size, shape, and any visible markings. Items unable to be positively identified will not be moved and will be BIP. b. Determination whether an item is armed or unarmed. Item will be examined for indications of arming. For example, projectile rotating bands would be scored if fired. Mortars would have an impinged percussion primer. Grenades would have a missing safety pin and spoon. An item, either armed or unarmed, may have been rendered unsafe to move due to damage. Types of damage that may render an item unsafe to move could include, but are not limited to, the following: a. Dents in the body or fuzing system. b. Holes or rips in the body or fuzing systems. c. Burns. If there is visible scorching and/or soot present.
10.	Section 3.2.5	Decision Rules: Decision Rule Number 3 states," explosive safety risk tool (Appendix G)..." Information regarding the explosive safety risk tool is included in Appendix H. Please revise the reference accordingly.	Reference to Appendix G has been revised to state "Appendix H."

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Comment No.	Section/ Page No.	Comment	Response
11.	Section 3.2.7.1	Sampling Within a Sector: The third paragraph states, "The assumed target density (sensitivity or resolution desired for the sampling results) is assigned based on anticipated reuse. A target density of 0.5 per acre (1 UXO per 2 acres) was used to calculate the size of the area to be sampled to achieve a 90 percent confidence level in the conclusion." For clarification, please clearly state the anticipated reuse. Please clarify how the anticipated reuse corresponds to the target density.	The anticipated reuse is activities similar in nature to past EOD training, and has been added. See also response to Comment No. 6. USAESCH has established guidelines of the target density based on previous studies. Reuse dictates the resolution required for sampling results based on this precept: The extent of sampling would be greater if reuse is residential as compared to like use. A higher degree of certainty is required in the estimation of the density of OE items for the former use scenario as compared to the latter.
12.	Section 3.2.7.2	Sampling Anomalies Within a Grid/Transect: The second paragraph in this section states, "The buffer zone transects and the perimeter geophysical survey along the site boundary will be sampled 100 percent for geophysical anomalies reported greater than 50 mV (millivolts)." Please clarify that both the inside and outside perimeter geophysical surveys along the site boundary will be sampled. Additionally, please clarify what 50 mV corresponds to and provide an explanation for using 50 mV as a minimum limit.	All geophysical anomalies-of-interest (both inside and outside perimeter) will be investigated to determine the anomaly source. The extent of the geophysical investigations will, however, be sequential. If there are no OE-related anomalies inside the range perimeter/boundary, there will be no geophysical investigation outside the perimeter fence. If, on the other hand, subsurface OE-related kick-out items are discovered within (inside of) the perimeter, the OE investigation (surface and subsurface searches) would be extended outside the range perimeter to identify offsite OE hazard potential. The reference to a 50-millivolt anomaly threshold criterion was for identification of the edges of pits/trenches to be investigated within the range and is not applicable to the Buffer Zone or perimeter searches. The 50mV threshold is based on a review of geophysical data and was judged to best represent the lateral extent of significant accumulation of metallic debris and/or OE scrap. For buffer zone and perimeter searches to identify individual anomaly sources, a 5-millivolt response above the modal background amplitude threshold would be appropriate.

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Comment No.	Section/ Page No.	Comment	Response
13.	Section 4.3.4	Chemical Warfare Material: This section states, "The archives search report (ASR), Range Identification and Preliminary Range Assessment and discussion with the Navy have indicated that the identified fieldwork areas should not contain chemical warfare material (CWM)." Please clarify the basis for the statement "should not contain CWM>" For example, if CWM was not used at Site 1, please state as much. Also, please include procedures for identifying CWM and how these materials will be handled and disposed.	The work plan has been revised to state that CWM is not suspected at Site 1. Therefore, procedures for handling and disposal of CWM would not be appropriate. The following text has been added after the 2nd sentence in section 4.3.4 to clarify the step in identifying potential CWM. "OE that is thin-cased and designed in a manner that could contain a liquid filler and cannot be positively identified as an explosive-filled ordnance item should be evaluated as potential CWM until proven otherwise."
14.	Figure 4-2	Process Flowchart: This figure depicts the process for addressing a surface anomaly. Please include the process for handling and disposing of chemical warfare material, if found.	Comprehensive evaluations conducted by the DoD (USACOE) that resulted in the development of the archive search report (ASR) and Range Identification and Preliminary Range Assessment did not find any data that would support the past use of CWM on Site 1. Accordingly, procedures in this plan only discuss the guidelines for the handling and disposal of OE. Section 4.3.4 states that all work will cease if items potentially containing CWM are identified. If CWM were identified on Site 1, a new work plan and field procedures would need to be developed to address it.

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15.	Section 4.4.2.3	Equipment: The first paragraph states, "Only one geophysical system will be used, a Geonic EM61 High Sensitivity Metal Detector." Please provide more information in the text to support the use of only the Geonics EM61 for the geophysical surveys. For example, why will the Geonics EM61 be used rather than the Geometrics G858? Also, please provide information on methods for reducing background noise associated with geophysical surveys.	Magnetometers (such as the Geometrics G858) are not appropriate for use at this, or any, disposal range, because disposal ranges contain a significant population of nonferrous OE items that cannot be detected with any magnetometer; however, magnetometers may be appropriate for impact ranges, where anticipated OE is comprised primarily of ferrous metal. Transient EM methods will be used because the physical parameters of the instrument response are such that the effective search radius of the instruments are very nearly limited to the footprint trace of the detector array. Background interference from clutter is therefore much less than would be obtained with either a magnetometer system or a frequency-domain EM system. The best means of reducing background noise effects in the data is to remove the source of noise, which is one of the purposes of conducting a surface search prior to collecting geophysical data. The impact of geologic variables, in areas with significantly conductive soils, can also be reduced (but not entirely removed) by use of trend surfaces and identification of modal responses.

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16.	Section 4.4.3.7	UXO Handling, Demolition, and Notification: Refer to the General Comment: Additionally, please provide a justification for not using a detonation chamber for demolition/detonation of UXO items. The justification should include an environmental analysis of potential groundwater, soil, air and human health impacts.	A discussion on the alternative of using a controlled blast chamber for demolition/detonation of UXO has been added to Section 3.3.3.2 The discussion concludes that utilizing a detonation chamber would require field workers to extract, handle, transport and place the unsafe-to-move OE item into the chamber. The risk involved in this alternative would be unacceptable when compared to a BIP, using mitigation in the form of engineering controls as discussed in the work plan. Environmental Impacts resulting from Open Burning/Open Detonations has been evaluated and documented in a report by Nichols Research Corporation (NRC), January 31, 1996. The results of the studies conducted at Camp Claiborne and Camp Grant concluded that open detonations of OE items would not result in concentrations of contaminants in soil that would pose a threat to humans provided that the following key criteria are met (NRC 1996): a. The net explosive weight for any single explosive ordnance detonation event must be less than 150 kg (330 lb.) b. The total net explosive weight at any one explosive ordnance detonation location must be less than 500 kg (1,100 lb.) c. Explosive material compositions are similar to those in the study. Environmental Impacts to air quality due to OB/OD operations have not been evaluated to date; however, evaluation of air quality impacts are planned during BIP operations at Fort Ord.

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17.	Section 4.4.3.10	Onsite OE Transportation and Storage: Item number 10 states, "OE/UXO storage on site is not planned or anticipated." According to Section 4.4.3.8, Removal and Handling of OE/UXO (SAFE to Move), "OE/UXO that is not considered an immediate threat to the safety of site workers (or public) will be moved to an onsite consolidation location in accordance with Section 4.4.3.10 and Figure 4-2." The work plan does not address the ultimate disposition of the explosively contaminated OE/UXO material to be consolidated on site. Please include this information in the text. Additionally, OE/UXO generated from evaluation activities is a hazardous waste. Please provide the information regarding the anticipated storage time, storage location (bunker or magazine), and associated procedures for consolidation and storage of OE/UXO in a manner that is protective of human health and the environment. Additionally, the description of the procedures for demolition/detonation for UXO items that can be safely moved to a consolidation location on site needs to include the size of shot (pounds net explosive weight) and number of shots per day.	The work plan has been revised to address the ultimate disposition of the explosively contaminated, safe-to-move OE items (unsafe-to-move OE items are already addressed by BIP procedures). Information pertaining to the size of shot (pounds net explosive weight) and number of shots per day has also been included. Item number 10 in Section 4.4.3.10 has been deleted. Information regarding the anticipated storage time, storage location, and associated procedures for consolidation and storage of OE items has also been provided.
18.	Section 5	Quality Control Plan: "Blind seeding" techniques should be included as part of the geophysical quality assurance.	Section 5 has been revised to accommodate blind seeding of OE items by planting potential kick-out items for QA/QC of the subsurface investigation. Items can be seeded at a density of 6/acre; representative inert OE items will be used (if available).
19.	Section 6.2	Work Clothing and Field Sanitation: Item number 4 states, "Hard hats will not be worn during excavation and demolition of UXO items." Please clarify, in the text, why hard hats will not be worn during excavation and demolition of UXO items in the text.	The text has been revised to state that "Hard hats will not be worn by personnel directly involved in the excavation and demolition of OE items due to hazards of the hard hat falling onto a hazardous explosive item and causing an unintentional detonation."

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20.	Appendix A, Table A-1	Geophysical Equipment Test Plot Lay-Out: Due to the limited description of ordnance reportedly used at the range provided in Section 2.2, the test plot layout described in Table A-1 may not include the smallest ordnance that could be encountered at the range. As a result, this test plot may not be sufficient to determine the detection efficiency of the instrumentation used for ordnance sweeps. Please verify inclusion of the smallest ordnance that could be encountered at the range and modify the test plot accordingly.	Concur. The smallest explosive ordnance item that could be encountered at the range would be a 20mm projectile. These are nominally 0.75 inches x 3.25 inches, and will be included in the test plot.
21.	Appendix C	Hazards of Electromagnetic Radiation to Ordnance: This appendix provides formulas for calculating safe separation distance for electromagnetic radiation devices. Please cite the reference for these formulas.	As per the manufacturer, the standard configuration of the Geonics EM61 exceeds the minimum standoff/separation distance. Accordingly, Appendix C, which provides formulas to calculate minimum separation distances for project-specific applications is not required and has been removed from the document. Appendix D through Appendix H have now been renamed Appendix C through Appendix G and references to the appendixes have been changed accordingly.
22.	Appendix D, Section 6.1	General Requirements: Item number 2 states, "OE or bulk explosives to be destroyed by detonation should be detonated in a pit not less than three feet deep and covered with earth, which protrudes not less than two feet above existing ground level. The components should be placed on their sides or in a position to expose the largest area to the influence of the demolition material." Please clarify if this standard operating procedure is intended to address "blow in place" of UXO that is unsafe to move. If this is the intended procedure, please clarify how the UXO that is unsafe to move will be placed in a pit for demolition.	Concur. Appendix D (which is now Appendix C) is a Standard Operating Procedure (SOP) for OE Operations that would have applicable procedures that could apply to most sites involving demolition tasks. However, item number 2 would specifically not be applicable to this site and has been removed.

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Reviewer: Nicole G. Moutoux- United States Environmental Protection Agency, Region IX, Project Manager, Federal Facilities Cleanup Branch, 03 May 01

Comment No.	Section/ Page No.	Comment	Response
GENERAL COMMENTS			
1.		Some of the definitions found in the section entitled "Key R3M Definitions" (i.e.>, Range, UXO) do not match those found in the Military Munitions Rule (40 CFR Part 260, et al) or those found in the R3M. It is essential that documents pertaining to OE cleanup activities use the same definitions of terms, and it would be helpful if the source of each definition were identified. While some definitions may occasionally need to be condensed or expanded, this may be done by a note at the end of the basic definition or by footnoting any added words and placing them at the end of the glossary or the bottom of the page. Also, definitions which are site-specific to the MCAS El Toro; which are used in a specific document or series of documents; or which are technical terms that are extracted from the appropriate technical literature may be used, but they should have consistent wording when transcribed from document to document. Please revise the section entitled "Key R3M Definitions" to include only definitions that can be referenced to official Federal Government, Environmental Protection Agency (EPA), Department of Defense (DoD), Department of the Navy (DoN), or other pertinent or subordinate organizations' documents as their source. An exception may be made if the definitions are site-specific to the MCAS El Toro are only used in a specific document or series of documents, are short explanations of acronyms, or are technical terms that are extracted from the appropriate technical literature and are identified as such. If established definitions are expanded or modified, please indicate this by a note at the end of the basic definition or by footnoting any added words and placing them at the end of the section or at the bottom of the page.	The name of the section has been revised to "Key Definitions," and now includes only definitions that can be referenced to official sources, such as EPA, DoD, DoN, etc. Notation has been added to denote site- or project-specific definitions.

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(1) Draft Work Plan, Ordnance and Explosives Range Evaluation, IRP Site 1, Explosive Ordnance Disposal Range, Marine Corps Air Station, El Toro, California

Reviewer: Nicole G. Moutoux- United States Environmental Protection Agency, Region IX, Project Manager, Federal Facilities Cleanup Branch, 03 May 01

Comment No.	Section/ Page No.	Comment	Response
SPECIFIC COMMENTS			
1.	Section 3.2.1, page 3-3	Problem Statement: This section seems to indicate that all of the activities conducted at the EOD Range were training of some nature. Please revise the referenced section to clarify whether or not the EOD Range was used exclusively for training and not for destruction of ordnance recovered during incident response	Destruction of ordnance, including those recovered during incident response, if any that was conducted, was performed exclusively for training (or under the aegis of training).
2.	Section 3.2.4.2, Page 3-5	Spatial (Sectors), subparagraphs "Northern EOD Range" and "Southern EOD Range": The statement is made here that "anomalies greater than 50 millivolts (mV)" were noted, but the instrument used is not specified, nor is the logic behind the 50 mV discriminator selection explained. (this number is also used in Section 4.4.3 "Intrusive Investigation of Subsurface OE," subsection "Impact Area," Page 4-9.) Please expand this section to discuss the instrument used in the previous study and the logic behind the selection of 50 mV as the anomaly investigation selection discriminator.	The logic for the selection of 50 mV is presented below and will be included in the "Decision Input" Section, 3.2.3. The Geonics, Ltd., EM61 High Sensitivity Metal Detector was used to accomplish the previous geophysical surveys. The 50 millivolt threshold is intended not as an anomaly discriminator, but rather as a boundary criterion for determining where to begin intrusive investigations related to potential subsurface OE. The text has been expanded by incorporation of the following as the first four sentences of the paragraph. "Previous geophysical surveys were completed using transient electromagnetic (TEM) metal detectors (Geonics, Ltd., EM61 High Sensitivity Metal Detector). During these surveys, numerous anomalous areas were identified that may be indicative of the presence of pits/trenches containing multiple metallic sources. A threshold of 50 millivolts (mV), as measured by the TEM metal detectors, was chosen as the initial demarcation of the boundaries of these anomalous areas, as opposed to outliers that may be representative of individual OE or OE scrap sources (kick-outs). All work will be in accordance with the Standard Operating Procedures detailed in Appendix A, Transient Electromagnetic Geophysical Investigation." The last sentence in Section 3.2.7.2 has been revised as follows: "reported greater than 50 mV." has been replaced with, "with coherent response signals greater than 5 mV above the background noise bandwidth."

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3.	Section 3.2.7, Page 3-7	Sampling Design: This portion of the plan refers to the use of the UXO Calculator program to calculate the percentage of each sector to be sampled. UXO Calculator requires that a determination of sector homogeneity be made or assumed. No discussion for the methodology of the homogeneity determination is provided in the section, which raises a concern as to the reliability of the use of the UXO Calculator program. The identification of a nonhomogeneous sector as homogeneous will seriously affect the validity of all further analyses done by UXO Calculator, since the homogeneity assumption is the basis for the estimation procedures used by UXO Calculator. Please expand the section of this plan entitled "Sampling Design" to better define the sampling process, including the identity of the method used for determination of sector homogeneity.	These sector boundaries suffice as homogeneous sectors to develop sampling calculations with the UXO calculator. During the course of the investigation and upon review of site specific OE data collected, modifications to the sector boundaries may be necessary to insure homogeneity based on the new data. The proposed land re-use is the same throughout the site and is therefore not a decision factor in determining sector homogeneity.
4.	Figure 3-1, Page 3-9	Investigation Approach: It appears that some of the one acre grids containing anomalies that appear to be significant are not being intrusively investigated. This is based upon the assumption that the dashed lines shown on the referenced figure identify grids that are not to be investigated. If this assumption is incorrect, please identify the purpose of the dashed lines. In either case, please indicate the purpose of the dashed grid lines in the explanation section of the chart. Also, please explain in detail the rationale for selection/non-selection of the grids depicted on the figure.	The minimum number of grids to be sampled is based on the minimum area to be sampled. Typically, the grids would be randomly selected. In this case, the grids with high densities of anomalies have been selected to obtain a worst-case estimation of the extent of buried OE items. Nine grids have been selected to be sampled 100%. The grids that contain dashed boundaries will not be sampled; however, their source/contents will be assumed to be similar to the ones sampled and evaluated as such in the Site Characterization Report.
5.	Section 4.4.1, Page 4-4	Surface Surveys, second paragraph, third sentence: This sentence indicates that an "all metals detector" will be provided to each person on the sweep line. However, Figure 4-1 on Page 4-5 has a notation that each UXO Tech will be equipped with a Schonstedt Magnetometer, which only detects ferrous metals. Please explain this apparent discrepancy and correct the referenced pages as necessary.	Figure 4-1 has been revised to state "UXO Tech with an all metals detector."

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Comment No.	Section/ Page No.	Comment	Response
6.	Section 4.4.2.3, Page 4-7	Equipment: It is stated here that "Only one geophysical system will be used, a Geonics EM61 High sensitivity metal detector." However, Section 4.4.3 "Intrusive Investigation of Subsurface OE" States that "An anomaly investigation team will identify the anomaly using the same type of device (EM metal detector or magnetometers) used to assess proximity to subsurface anomalies..." These three sections appear to be in conflict and refer to at least three different detection devices being used. Please explain the apparent conflict and revise the three referenced sections as necessary to eliminate the discrepancies and more fully explain the processes.	Comment #6 refers to three conflicting sections; only two are actually described in comment. The texts of these two sections have been revised as follows: SECTION 4.4.2.3 1st paragraph has been deleted. The following text has been added to the end of the 2nd paragraph: "Additionally, magnetometer systems cannot detect the nonferrous OE components that may be present in the EOD training range." The following text has been added as the 3rd paragraph, "The Geonics, Ltd., EM61 High Sensitivity Metal Detector will be used to digitally capture the geophysical response to subsurface metallic objects that may be OE or OE scrap. The EM61 was used in the previous work at this site, as well as in similar investigations at other ordnance sites. The EM61 has been demonstrated to detect metallic debris and OE scrap 8 feet to 10 feet below ground surface (bgs), and has proven capable of detecting 20mm and 37mm projectiles at 1 foot to 1.5 feet bgs, which is well below the depth such OE would penetrate if kicked out of a pit by explosive demolitions." SECTION 4.4.3 The following phase has been deleted from the 1st sentence: "the same type of device (EM metal detector or magnetometer)." It has been replaced with: "an all-metals detector meeting the SOP performance criteria detailed in Appendix A to ensure personnel safety during intrusive activities."

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7.	Figure 4-2, Page 4-15	Process Flowchart: It appears that an arrow from the box labeled "Venting/DEMIL" should connect with the apex of the decision diamond labeled "Explosively Contaminated." The arrow connecting the box labeled "Venting/DEMIL" with the box labeled "Certification" should be removed. The portion of the arrow connecting the "NO" end of the decision diamond labeled "Explosively Contaminated" with the box labeled "Certification" should be left in place. Also, the decision diamond labeled "SWDIV Approval" should be placed in the "YES" line from the decision diamond labeled "Safe to Move UXO," with the "YES" line continuing to the box labeled "Move to Onsite Consolidation Location" and the "NO" arrow that is just below the "Safe to Move UXO" decision diamond. These corrections will better reflect the decision process and bring the chart into better compliance with traditional flowcharting protocol.	The process flowchart has been revised and is attached here for review. The work plan has been revised to include mention of venting and perforation procedures, which will be used to ascertain whether the safe to move OE is explosively charged. The flowchart also includes venting.